

AMENDMENTS TO THE CLAIMS

Claims 1 - 37. (Cancelled)

38. (New) A method for assisting the growth of a plant, comprising the step of:

applying to the plant an effective amount of the plant-activating agent composition thereto, said plant-activating agent composition comprising:

(a) a plant-activating agent selected from the group consisting of:

(1) lipids or derivatives thereof, wherein said lipids or derivatives thereof are selected from the group consisting of monoacyl glycerol, diacyl glycerol, phosphatidylserines, phosphatidylethanolamines, sphingomyelin, phosphatidic acid, sphingolipid, glycolipid, terpenoid and sterols,

(2) alcohols or derivatives thereof, wherein said alcohols or derivatives thereof are selected from the group consisting of distearyl ether, stearyl cetyl ether, ethylene glycol, diethylene glycol, polyethylene glycol, erythritol, pentaerythritol, pentitol, batyl alcohol, isostearyl glyceryl ether, behenyl glyceryl ether, N-lauroyl N-methylglucamide, and N-stearoyl N-methylglucamide,

(3) amines or derivatives thereof, wherein said amines are selected from the group consisting of a primary, secondary and tertiary long chain amine, diamine and triamine having a C₈₋₃₀ alkyl group, or a salt thereof, and wherein said derivatives are selected from a quaternary ammonium salt, choline or a salt thereof, and a fatty acid salt of choline,

(4) amino acids or derivatives thereof, wherein said amino acids or derivatives thereof are selected from the group consisting of ornithine derivatives, creatine derivatives, and acylated glutamine derivatives,

(5) proteins or derivatives thereof, wherein said proteins or derivatives thereof are selected from the group consisting of glutathione, oxytocin, casein, keratin, hemoglobin, albumin and collagen,

(6) nucleic acids or derivatives thereof, wherein said nucleic acids or derivatives thereof are selected from the group consisting of ribonucleic acids, deoxyribonucleic acids, decomposed products thereof, nucleoside phosphates thereof and nucleotides which are constituent units thereof,

(7) natural extracts, wherein said natural extracts are selected from the group consisting of hinokitiol, chitin, chitosan, chlorella-decomposed products and wood vinegar,

(8) fermentation residues, wherein said fermentation residues are selected from the group consisting of fermentation products obtained by mixed organic acid fermentation, glycerol fermentation and penicillin fermentation, and

(9) vitamins wherein said vitamins are selected from the group consisting of coenzymes thereof, and vitamins A, D, E and K,

wherein said agent shows not less than a 5% increase in unicellular green cell count within 15 days after an effective concentration of the plant activator has been given to a plant, wherein said increase in unicellular green cell count is calculated by the following formula:

Increase in unicellular green cell count (%)

$$= [(P_1 - P_0) / P_0] \times 100$$

wherein P_0 represents the count of unicellular green cells when the plant-activating agent is not used, and P_1 represents the count of unicellular green cells when the plant-activating agent is used; and

(b) a surfactant, wherein said surfactant is at least one selected from an ester group-containing nonionic surfactant, an amphoteric surfactant, a carboxylic anionic surfactant, a phosphoric acid group-containing anionic surfactant and an ether group-containing nonionic surfactant having no nitrogen atom,

wherein said ether group-containing nonionic surfactant is at least one selected from a polyoxyalkylene alkyl ether, an alkyl (poly)glycoside and a polyoxyalkylene alkyl (poly)glycoside.

39. (New) The method for assisting the growth of a plant as claimed in the claim 38, satisfying at least one of the following (a), (b), (c), (d) and (e):

- (a) an improved degree of SPAD chlorophyll value of said plant of not less than two points,
- (b) an increase in the weight of said plant of not less than 10%, wherein the weight of said plant is either a fresh weight or a dry weight,
- (c) an improved degree of leaf-area of said plant of not less than 5%,
- (d) an increase in the concentration amount of ascorbic acid in a blade part of said plant of not less than 5%, and
- (e) a decrease in the concentration amount of nitrate ion in a blade part of said plant of not less than 10%.

40. (New) The method for assisting the growth of a plant of claim 38 or claim 39, wherein said unicellular green cells are chlorella and said substance has not less than a 5% increase in unicellular green cell count of said chlorella.

41. **(New)** The method for assisting the growth of a plant of claim 38 or claim 39, wherein said agent is given in the form of an aqueous solution or an aqueous dispersion in an amount of 1 to 500 ppm.

42. **(New)** The method for assisting the growth of a plant of claim 38 or claim 39, wherein said agent is given by spraying in the form of a solid agent that in a granular form, a dust formulation, an aqueous solution or an aqueous dispersion of the plant-activating agent, and is given as an active component in a proportion of 0.001 to 3000 kg per 1000 m².

43. **(New)** The method for assisting the growth of a plant of claim 38 or claim 39, and said plant-activating agent composition further comprising a chelating agent.

44. **(New)** The method for assisting the growth of a plant of claim 38 or claim 39, wherein a ratio by weight of said surfactant to said plant-activating agent is from 0.01 to 100.

45. **(New)** The method for assisting the growth of a plant of claim 38 or claim 39, wherein a HLB of said surfactant is not less than 10.

46. (New) The method for assisting the growth of a plant of claim 38 or claim 39, wherein said method comprises the step of giving said effective amount of the plant-activating agent directly as a solid fertilizer in the form of a dust formulation or a granule formulation.

47. (New) The method for assisting the growth of a plant of claim 38 or claim 39, wherein said method comprises the step of spraying a diluted aqueous solution containing said effective amount of the plant-activating agent directly on phylloplanes, stems or fruits of said plant.

48. (New) The method for assisting the growth of a plant of claim 38 or claim 39, wherein said method comprises the step of injecting a diluted aqueous solution containing said effective amount of the plant-activating agent into soil.

49. (New) The method for assisting the growth of a plant of claim 38 or claim 39, wherein said method comprises the step of contacting the roots to said plant with water that includes therein a diluted and mixed aqueous liquid for hydroponics that contains said effective amount of the plant-activating agent.

50. (New) A method for assisting the growth of a plant, comprising the step of:

applying to the plant an effective amount of the plant-activating agent composition thereto, said plant-activating agent composition comprising:

(a) a plant-activating agent selected from the group consisting of:

(1) lipids or derivatives thereof, wherein said lipids or derivatives thereof are selected from the group consisting of monoacyl glycerol, diacyl glycerol, phosphatidylserines, phosphatidylethanolamines, sphingomyelin, phosphatidic acid, sphingolipid, glycolipid, terpenoid and sterols,

(2) alcohols or derivatives thereof, wherein said alcohols or derivatives thereof are selected from the group consisting of distearyl ether, stearyl cetyl ether, ethylene glycol, diethylene glycol, polyethylene glycol, erythritol, pentaerythritol, pentitol, batyl alcohol, isostearyl glyceryl ether, behenyl glyceryl ether, N-lauroyl N-methylglucamide, and N-stearoyl N-methylglucamide,

(3) amines or derivatives thereof, wherein said amines are selected from the group consisting of a primary, secondary and tertiary long chain amine, diamine and triamine having a C₈₋₃₀ alkyl group, or a salt thereof, and wherein said

derivatives are selected from a quaternary ammonium salt, choline or a salt thereof, and a fatty acid salt of choline,

- (4) amino acids or derivatives thereof, wherein said amino acids or derivatives thereof are selected from the group consisting of ornithine derivatives, creatine derivatives, and acylated glutamine derivatives,
- (5) proteins or derivatives thereof, wherein said proteins or derivatives thereof are selected from the group consisting of glutathione, oxytocin, casein, keratin, hemoglobin, albumin and collagen,
- (6) nucleic acids or derivatives thereof, wherein said nucleic acids or derivatives thereof are selected from the group consisting of ribonucleic acids, deoxyribonucleic acids, decomposed products thereof, nucleoside phosphates thereof and nucleotides which are constituent units thereof,
- (7) natural extracts, wherein said natural extracts are selected from the group consisting of hinokitiol, chitin, chitosan, chlorella-decomposed products and wood vinegar,
- (8) fermentation residues, wherein said fermentation residues are selected from the group consisting of fermentation products obtained by mixed organic acid

fermentation, glycerol fermentation and penicillin fermentation, and

(9) vitamins wherein said vitamins are selected from the group consisting of coenzymes thereof, and vitamins A, D, E and K,

wherein said agent shows not less than a 5% increase in green cell count of a callus of green cells within 15 days after an effective concentration of the plant activator has been given to a plant, wherein said increase in green cell count is calculated by the following formula:

Increase in green cell count of a callus of green cells (%)

$$= [(P_1 - P_0) / P_0] \times 100$$

wherein P_0 represents the count of green cells of a callus of green cells when the plant-activating agent is not used, and P_1 represents the count of green cells of a callus of green cells when the plant-activating agent is used; and

(b) a surfactant, wherein said surfactant is at least one selected from an ester group-containing nonionic surfactant, an amphoteric surfactant, a carboxylic anionic surfactant, a phosphoric acid group-containing anionic surfactant and an ether group-containing nonionic surfactant having no nitrogen atom, wherein said ether group-containing nonionic surfactant is at least one selected from a polyoxyalkylene alkyl ether, an alkyl (poly)glycoside and a polyoxyalkylene alkyl (poly)glycoside.

51. (New) The method for assisting the growth of a plant as claimed in the claim 50, satisfying at least one of the following (a), (b), (c), (d) and (e):

- (a) an improved degree of SPAD chlorophyll value of said plant of not less than two points,
- (b) an increase in the weight of said plant of not less than 10%, wherein the weight of said plant is either a fresh weight or a dry weight,
- (c) an improved degree of leaf-area of said plant of not less than 5%,
- (d) an increase in the concentration amount of ascorbic acid in a blade part of said plant of not less than 5%, and
- (e) a decrease in the concentration amount of nitrate ion in a blade part of said plant of not less than 10%.

52. (New) The method for assisting the growth of a plant of claim 50 or claim 51, wherein said callus of green cells is a liverwort and said substance has not less than a 5% increase in green cell count of said liverwort callus.

53. (New) The method for assisting the growth of a plant of claim 50 or claim 51, wherein said agent is given in the form of

an aqueous solution or an aqueous dispersion in an amount of 1 to 500 ppm.

54. (New) The method for assisting the growth of a plant of claim 50 or claim 51, wherein said agent is given by spraying in the form of a solid agent that in a granular form, a dust formulation, an aqueous solution or an aqueous dispersion of the plant-activating agent, and is given as an active component in a proportion of 0.001 to 3000 kg per 1000 m².

55. (New) The method for assisting the growth of a plant of claim 50 or claim 51, and said plant-activating agent composition further comprising a chelating agent.

56. (New) The method for assisting the growth of a plant of claim 50 or claim 51, wherein a ratio by weight of said surfactant to said plant-activating agent is from 0.01 to 100.

57. (New) The method for assisting the growth of a plant of claim 50 or claim 51, wherein a HLB of said surfactant is not less than 10.

58. (New) The method for assisting the growth of a plant of claim 50 or claim 51, wherein said method comprises the step of

giving said effective amount of the plant-activating agent directly as a solid fertilizer in the form of a dust formulation or a granule formulation.

59. (New) The method for assisting the growth of a plant of claim 50 or claim 51, wherein said method comprises the step of spraying a diluted aqueous solution containing said effective amount of the plant-activating agent directly on phylloplanes, stems or fruits of said plant.

60. (New) The method for assisting the growth of a plant of claim 50 or claim 51, wherein said method comprises the step of injecting a diluted aqueous solution containing said effective amount of the plant-activating agent into soil.

61. (New) The method for assisting the growth of a plant of claim 50 or claim 51, wherein said method comprises the step of contacting the roots to said plant with water that includes therein a diluted and mixed aqueous liquid for hydroponics that contains said effective amount of the plant-activating agent.